

## MANUFACTURE OF SEMICONDUCTOR DEVICE

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**Publication date:** 2000-03-21  
**Inventor:** TANIGAWA TAKAO  
**Applicant:** NEC CORP  
**Classification:**  
- - international: H01L27/108; H01L21/8242  
- - european:  
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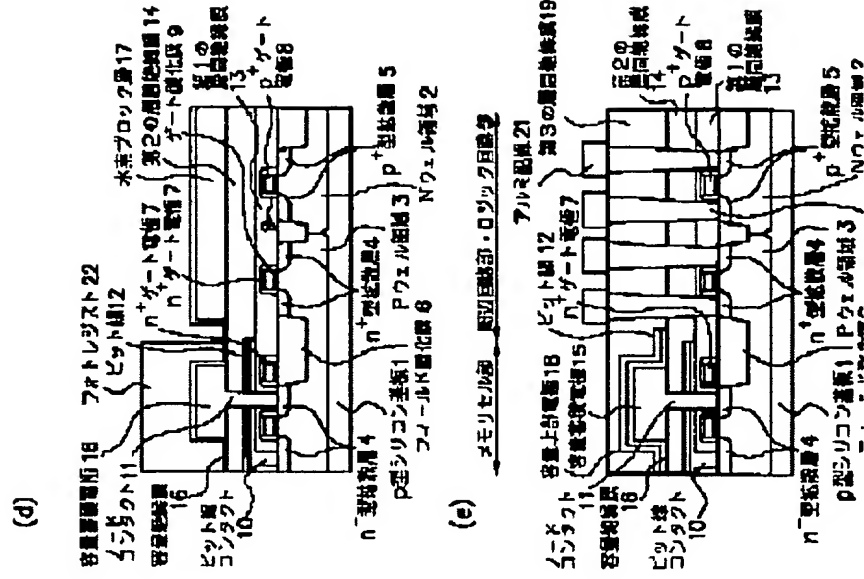
## Abstract of JP2000082803

**PROBLEM TO BE SOLVED:** To prevent hydrogen atoms from penetrating through a gate oxide film by a method wherein a hydrogen block layer is provided to a peripheral circuit and a logic circuit respectively, a photoresist layer is selectively left on a memory section, and the hydrogen block layer formed on the peripheral circuit and the logic circuit is removed by etching.

**SOLUTION:** The surface of a polycrystalline silicon film provided to a capacity storage electrode forming region of a memory cell section and a peripheral circuit/logic circuit region is masked, and a capacitance storage cell 15 and hydrogen block layer 17 are formed. After a photoresist layer is removed, a silicon nitride film is deposited on the surface of the capacity storage cell, and the surface of the nitride film is oxidized for the formation of a capacity insulating film 16. A photoresist 22 is selectively left so as to cover a memory cell, the capacity insulating film 16 of the peripheral circuit/logic circuit is removed using the photoresist 22 as a mask, and the hydrogen block layer 17 is removed by etching. By this setup, a semiconductor device is prevented from deteriorating in threshold voltage due to the generation and downward diffusion of hydrogen.

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